California Environmental Protection Agency
Department of Toxic Substances Control

DRAFT STANDARDIZED HAZARDOUS WASTE FACILITY PERMIT, SERIES A

Facility Name: ECS Refining
705 Reed Street
Santa Clara, California

Owner Name: ECS Refining
705 Reed Street
Santa Clara, California 95050

Operator Name: ECS Refining
705 Reed Street
Santa Clara, California 95050

EPA ID Number: CAD 003 963 592

Effective Date: **DRAFT**

Expiration Date:

Pursuant to California Health and Safety Code sections 25200 and 25201.6, this Standardized Hazardous Waste Facility Permit is hereby issued to ECS Refining.

The Issuance of this Permit is subject to the terms and conditions set forth in Attachment A. This Permit consists of 40 pages, including this cover page and Attachment A.

_____
Ray Leclerc, P.E. Team Leader
Permit Renewal Team
Department of Toxic Substances Control

_____
Date

ECS REFINING
705 REED STREET
SANTA CLARA, CALIFORNIA 95050

EPA ID NUMBER: CAD 003 963 592

DRAFT STANDARDIZED HAZARDOUS WASTE FACILITY PERMIT

ATTACHMENT "A"

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PART I. DEFINITIONS

All terms used in this Permit shall have the same meaning as those terms have in the California Health and Safety Code, division 20, chapter 6.5 and California Code of Regulations, title 22, division 4.5, unless expressly provided otherwise by this Permit.

1. **"DTSC"** as used in this Permit means the California Department of Toxic Substances Control.

2. **"Facility"** as used in this Permit means all contiguous land and structures, other appurtenances, and improvements on the land used for the treatment, transfer, storage resource recovery, disposal or recycling of hazardous waste. A hazardous waste facility may consist of one or more treatment, transfer, storage, resource recovery, disposal or recycling operational units or combinations of these units.

   For the purpose of implementing corrective action under California Code of Regulations, title 22, division 4.5, a hazardous waste facility includes all contiguous property under the control of the owner or operator required to implement corrective action.

3. **"Permittee"** as used in this Permit means the Owner and Operator.

4. **"RCRA"** as used in this Permit means the Resource Conservation and Recovery Act (42 U.S.C. §6901 et seq.).

5. **"RCRA hazardous waste"** as used in this Permit is as defined in Health and Safety Code section 25120.2.

6. **"Non-RCRA hazardous waste"** as used in this Permit is as defined in Health and Safety Code section 25117.9.

PART II. DESCRIPTION OF THE FACILITY AND OWNERSHIP

1. Owner of Facility

ECS Refining
705 Reed Street
Santa Clara, California 95050

2. Owner of Real Property

ECS Refining conducts activities that cover several adjoining lots of land. The lots of land on which ECS Refining conducts business are 705 Reed Street (See Figure 1), 710 Reed Street, 735 Reed Street, 710 Parker Street, 720 Parker Street and 730 Parker Street. However, activities conducted under the authorization of this Permit only occur in the A Warehouse located at 705 Reed Street and the D Warehouse located at 730 Parker Street (See Figure 2).

The owner for the lot of land and building located at 705 Reed Street is Mr. Hubert Forsyth. Mr. Forsyth's address is 220 Montgomery Street, Suite 1094, San Francisco, California 94104.

The facility owner for the lot of land located at 730 Parker Street is All Metals, Incorporated. All Metals, Incorporated's address is 705 Reed Street, Santa Clara, California 95050.

3. Operator of Facility

ECS Refining
705 Reed Street
Santa Clara, California 95050

4. Location

The Facility is located at 705 Reed Street, Santa Clara, California 95050, in Santa Clara County, at latitude 37 degrees 21' and longitude 121 degrees 56'. The Facility is located on land that is designated by the City of Santa Clara for heavy industrial use. The following are the legal descriptions of the lots that comprise the permitted hazardous waste portions of the Facility:

705 Reed Street

"Being a portion of Block 13, as shown upon the Map of Laurelwood Farm, which Map was filed in the office of the Recorder of the County of Santa Clara, State of California, March 13, 1924 in Book "S" of Maps, at page 8, containing 0.94 of an acre more or less."

730 Parker Street

"That portion of Block 13, as shown on that certain Map entitled "Laurelwood Farm Subdivision," which Map was filed for record in the office of the Recorder of the County of Santa Clara, State of California on March 13, 1924 in Book S of Maps page(s) 7 and 8."

All of the hazardous waste activities authorized by this permit are conducted in Warehouse A, which is located at 705 Reed Street, and Warehouse D, which is located at 730 Parker Street. However, ECS also handles universal waste at adjacent properties in Warehouse B, Warehouse C, Warehouse E, and the Non-hazardous Universal Waste Storage Area marked on the Facility Plot Plan (Figure 2).

5. Description of Facility Operations

ECS Refining recycles a variety of metal-bearing hazardous, universal and non-hazardous wastes, which include precious metal-bearing electronic scrap, tin/lead solder dross and related wastes from electronics manufacturing, waste photochemical solutions with silver, metal-bearing sludges and wastewaters, and cathode ray tubes/computer monitors.

Recycling processes employed at the facility include shredding and segregation of recyclable materials for end-point recycling. Materials may also be melted on-site in furnaces for metal recovery. Liquid photochemical wastewaters and other metal-bearing wastewaters may be treated with precipitants to recover metals, treated with metallic replacement cartridges, or have the water evaporated to produce metal-rich sludge. As a result of these recycling processes, scrap materials such as aluminum, steel, copper, metal ingots and crushed glass are produced and sold for re-use or further product recovery.

This permit renewal does not represent a change in the scope of ECS Refining's operations. However, several previously permitted hazardous waste treatment units have been removed since the Standardized Permit was issued in 1997. These units are not included in the renewal permit application because of permit modifications, unit closures, units that were never installed and units that no longer process hazardous waste. Additionally, three tanks that were part of Unit #1, Photochemical Processing Unit, will be closed before the permit is renewed. The storage capacity of Storage Area I and Storage Area IV will be reduced. Two units will be added to this Permit, the E-Waste and Printed Circuit Board Shredder (Unit #27) and the CRT Glass Washing Unit (Unit #28).

All Facility operations are conducted in the enclosed main building (Warehouse A), Warehouse D and in the fully covered Storage Area IIb attached to Warehouse A. Hazardous air emissions are controlled by air pollution control devices that are regulated by the Bay Area Air Quality Management District.

While not a permitted activity, ECS Refining accepts universal and non-hazardous wastes for recycling. The universal wastes accepted for recycling include cathode ray tubes (CRTs) and computer monitors, Universal Waste Electronic Devices (UWEDs) and related electronic scrap. These materials are shredded, classified and separated to maximize their recycling value. These activities are allowed by universal waste regulations and do not require authorization under this permit.

6. Facility History

The Facility has been operating at this location since 1979. At that time, the company was known as All Metals, Incorporated, doing business as ECS Refining. They received Interim Status in 1993 and were issued a Standardized Permit, Series A on December 30, 1997. On January 1, 2002, ownership of the company (and the Facility) formally changed from All Metals, Inc. doing business as ECS Refining to ECS Refining Texas LLC doing business as ECS Refining. On December 21, 2006, ECS Refining submitted an application to renew their Standardized Permit. DTSC determined the application to be administratively complete on January 10, 2007. The Standardized Permit expired on December 30, 2007. In accordance with California Code of Regulations, title 22, section 66270.51, ECS Refining is allowed to continue operating under the terms of the expired permit until DTSC makes a final permit determination on ECS Refining's renewal application.

7. Facility Size and Type for Fee Purposes

This Permit is categorized as a "Series A" Standardized Permit pursuant to Health and Safety Code section 25201.6 and for purposes of Health and Safety Code sections 25205.2 and 25205.19.

8. Closure Cost Estimate

The Closure Cost Estimate (in 2008 Dollars), as approved by DTSC on November 6, 2008, is $237,329.88.

PART III. GENERAL CONDITIONS

1. PERMIT APPLICATION DOCUMENTS

The Standardized Permit Application dated April 28, 2008 and submitted to DTSC by the Permittee is hereinafter referred to as the "Standardized Permit Application" and is hereby made a part of this Permit by reference.

2. EFFECT OF PERMIT

(a) The Permittee shall comply with the terms and conditions of this Permit and the provisions of the Health and Safety Code and California Code of Regulations (Cal. Code Regs.), title 22, division 4.5. The issuance of this Permit by DTSC does not release the Permittee from any liability or duty imposed by federal or state statutes or regulations or local ordinances, except the obligation to obtain this Permit. The Permittee shall obtain the permits required by other governmental agencies, including but not limited to, those required by the applicable land use planning, zoning, hazardous waste, air quality, water quality, and solid waste management laws for the construction and/or operation of the Facility.

(b) The Permittee is permitted to treat and store hazardous wastes in accordance with the terms and conditions of this Permit. Any management of hazardous wastes not specifically authorized in this Permit is strictly prohibited.

(c) Compliance with the terms and conditions of this Permit does not constitute a defense to any action brought under any other law governing protection of public health or the environment, including, but not limited to, one brought for any imminent and substantial endangerment to human health or the environment.

(d) DTSC's issuance of this Permit does not prevent DTSC from adopting or amending regulations that impose additional or more stringent requirements than those in existence at the time this Permit is issued and does not prevent the enforcement of these requirements against the Permittee.

(e) Failure to comply with any term or condition set forth in the Permit in the time or manner specified herein will subject the Permittee to possible enforcement action including but not limited to penalties pursuant to Health and Safety Code section 25187.

(f) Failure to submit any information required in connection with the Permit, or falsification and/or misrepresentation of any submitted information, is grounds for revocation of this Permit (Cal. Code Regs., tit. 22, §66270.43).

(g) In case of conflicts between the Operation Plan and the Permit, the Permit conditions take precedence.

(h) This Permit includes and incorporates by reference any conditions of waste discharge requirements issued to the Facility by the State Water Resources Control Board or any of the California Regional Water Quality Control Boards and any conditions imposed pursuant to section 13227 of the Water Code.

3. COMPLIANCE WITH CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

A Negative Declaration has been prepared in accordance with the requirements of Public Resources Code section 21000 et seq. and the CEQA Guidelines, section 15070 et seq. of California Code of Regulations, title 14.

4. ENVIRONMENTAL MONITORING

The Permittee shall comply with the applicable environmental monitoring and response program requirements of California Code of Regulations, title 22, division 4.5, chapter 14, articles 6 and 17.

5. ANNUAL HAZARDOUS WASTE REDUCTION AND MINIMIZATION CERTIFICATION

The Permittee shall certify annually that it has a hazardous waste reduction and minimization program and method in place and shall keep the annual certification as part of its Operating Record in accordance with California Code of Regulations, title 22, section 66264.73(b)(9).

6. ACCESS

(a) DTSC, its contractors, employees, agents, and/or any United State Environmental Protection Agency representatives are authorized to enter and freely move about the Facility for the purposes of interviewing Facility personnel and contractors; inspecting records, operating logs, and contracts relating to the Facility; reviewing progress of the Permittee in carrying out the terms of Part VI of the Permit; conducting such testing, sampling, or monitoring as DTSC deems necessary; using a camera, sound recording, or other documentary-type equipment; verifying the reports and data submitted to DTSC by the Permittee; or confirming any other aspect of compliance with this Permit, Health and Safety Code, division 20, chapter 6.5, and California Code of Regulations, title 22, division 4.5. The Permittee shall provide DTSC and its representatives access at all reasonable times to the Facility and any other property to which access is required for implementation of any provision of this Permit, Health and Safety Code, division 20, chapter 6.5, and California Code of Regulations, title 22, division 4.5, and shall allow such persons to inspect

and copy all records, files, photographs, documents, including all sampling and monitoring data, that pertain to work undertaken pursuant to the entire Permit or undertake any other activity necessary to determine compliance with applicable requirements.

(b) Nothing in this Permit shall limit or otherwise affect DTSC's right to access and entry pursuant to any applicable State or federal laws and regulations.

PART IV. PERMITTED UNITS AND ACTIVITIES

This Permit authorizes operation only of the facility units and activities listed below. The Permittee shall not treat, store or otherwise manage hazardous waste in any unit other than those specified in this Part IV. Any modifications to a unit or activity authorized by this Permit require the written approval of DTSC in accordance with the permit modification procedures set forth in California Code of Regulations, title 22, division 4.5.

UNIT NAME:

Photochemical Processing Unit

LOCATION:

This treatment unit is located within the bermed confines of Storage Areas IIa and IIb and is identified as Unit 1 on the Facility Plot Plan (Figure 2).

ACTIVITY TYPE:

Treatment in Tanks

ACTIVITY DESCRIPTION:

The Photochemical Processing Unit removes the silver from liquid photochemical waste using one of two types of treatment: (1) metallic replacement of the silver for iron using steel wool metallic replacement cartridges, or (2) use of a proprietary chemical (S-ROM) in conjunction with carbon filtration to remove silver from the waste stream. The S-ROM precipitation also has the capability to remove small amounts of other metal contaminants, such as chromium or zinc, so other metal-bearing wastewaters may also be treated in this unit.

The steel wool metallic replacement cartridge process is not authorized by this permit as a hazardous waste treatment activity in California, since the passage of SB 2111 in 1998 mandated that silver-only hazardous wastes be regulated in California only to the extent they are regulated under RCRA. The steel wool metallic replacement cartridge treatment process treats strictly silver-bearing photochemical solutions. The S-ROM/Carbon Precipitation process is authorized under this permit to treat other metal-bearing wastewaters.

The effluent from both treatment processes may either be discharged under permit to a publicly owned treatment works (POTW) after batch sampling (if local discharge limits are met) or may be sent off-site as a non-hazardous wastewater if the metal concentrations are below TCLP and STLC levels. Batches that do not meet discharge limits are reprocessed in order to meet the discharge limits.

The silver/iron sludge contained in the steel wool metallic replacement cartridge is dried and smelted into silver bars. The S-ROM sludge is harvested as needed (generally once per month) and is smelted on-site to produce silver bars.

PHYSICAL DESCRIPTION:

Tanks are used to store the photochemicals prior to processing, to treat the waste using the S-ROM precipitant, and to hold the effluent prior to release. Pumps are used to move the photochemicals from one tank through the steel wool metallic replacement columns, or through the mega-filter and into the effluent holding tanks.

Tanks A, B, C, 1, 2, and 3 are the tanks associated with the Photochemical Processing Unit and the Vacuum Evaporation Unit. For more information about these tanks, refer to the Storage Area IIa and IIb unit descriptions of this Permit (pages 27-30).

MAXIMUM CAPACITY:

The maximum permitted treatment capacity is 1,500 gallons per day.

WASTE TYPES (see Table 1):

Photochemicals with Silver (Waste F)
Metal-bearing wastewaters (Waste Y)

HAZARDOUS WASTE CODES (see Table 2):

U. S. EPA Hazardous Waste Codes: D004, D005, D006, D007, D008, D010, D011

California Waste Codes: 121, 132, 135, 541, 721, 722, 724, 726, 727, 728

UNIT NAME:

Vacuum Evaporation Unit

LOCATION:

This treatment unit is located within the bermed confines of Storage Area IIb and is identified as Unit 3 on the Facility Plot Plan (Figure 2).

ACTIVITY TYPE:

Treatment in Tanks

ACTIVITY DESCRIPTION:

The Vacuum Evaporation Unit removes the water from photochemicals with silver or other metal-bearing wastewaters. Under vacuum, the double-effect evaporator removes water from the liquid photochemical waste or wastewaters and recondenses it into a holding tank for testing. This treatment process produces metal-rich sludge as a product and distilled water effluent as a by-product. The sludge (or concentrate) may be smelted on-site for metal recovery or shipped off-site for further recovery. The distillate may either be discharged under permit to the POTW after batch sampling (if local discharge limits are met) or may be sent off-site as a non-hazardous wastewater if the metal concentrations are below TCLP and STLC levels. Batches that do not meet discharge limits are reprocessed in order to meet the discharge limits.

PHYSICAL DESCRIPTION:

The Vacuum Evaporation Unit is a skid mounted manufactured assembly. It consists of two stainless steel tanks that serve as reservoirs for the concentrate and distillate, two cylindrical shells made of fiber reinforced plastic where the actual evaporation takes place, PVC piping, a stainless steel condenser to condense the vapors driven from the concentrate, and stainless steel pumps to move the concentrate and distillate through the system. The heating tubes inside of the evaporator shells are made of titanium and stainless steel. The frame supporting the Vacuum Evaporation Unit is made of steel and coated with an epoxy paint to resist corrosion. The Vacuum Evaporation Unit is also associated with a boiler and cooling tower.

Tanks A, B, C, 1, 2, and 3 are used to feed this unit and to contain the effluent, and are also used in conjunction with the Photochemical Processing Unit. For more information about these tanks, refer to the Storage Area IIa and IIb unit descriptions of this Permit (pages 27-30).

MAXIMUM CAPACITY:

The maximum permitted treatment capacity is 1,500 gallons per day.

WASTE TYPES (see Table 1):

Photochemicals with Silver (Waste F)
Metal-bearing wastewaters (Waste Y)

HAZARDOUS WASTE CODES (see Table 2):

U. S. EPA Hazardous Waste Codes: D004, D005, D006, D007, D008, D010, D011

California Waste Codes: 121, 132, 135, 541, 721, 722, 724, 726, 727, 728

UNIT NAME:

Hot Pot Furnace

LOCATION:

The Hot Pot Furnace is located in the furnace area of the facility's main building (Warehouse A), to the north of Storage Area IV (Unit 13), and is identified as Unit 7 on the Facility Plot Plan (Figure 2).

ACTIVITY TYPE:

Treatment

ACTIVITY DESCRIPTION:

The Hot Pot Furnace is used to melt metal-bearing wastes, primarily silver flake. The material is manually added to the crucible. Fluxing agents may also be added depending on the material composition. The unit is turned on and the material is heated until it is completely melted. The crucible is then lifted from the furnace and its molten contents are poured into a prepared ingot mold. Once the mold has cooled, the slag is separated from the ingot.

PHYSICAL DESCRIPTION:

The unit is a gas-fired pot crucible furnace consisting of a cylindrical, open-topped, refractory-lined burning chamber with removable silicon carbide crucibles as the melting chamber. The crucible is manually loaded with material and is moved into and out of the burning chamber with the aid of a manual hoist. The crucible's internal capacity is 9 inches x 15 inches.

MAXIMUM CAPACITY:

The maximum permitted treatment capacity is 50 pounds of hazardous waste per hour. This capacity includes all waste streams permitted for treatment in this unit.

WASTE TYPES (see Table 1):

Silver Flake (Waste L)
Off-specification, aged or surplus inorganics (Waste N)
Laboratory chemical waste (Waste O)
Metal dust/machining waste (Waste P)
Other metal-bearing sludges (dry) (Waste Q)

HAZARDOUS WASTE CODES (see Table 2):

U.S. EPA Hazardous Waste Codes: D004, D005, D006, D007, D008, D010, D011

California Waste Codes: 141, 171, 172, 491, 551

UNIT-SPECIFIC SPECIAL CONDITIONS:

1. The Hot Pot Furnace shall not be used to treat wastes that contain free liquids.

UNIT NAME:

Tray Furnace

LOCATION:

The Tray Furnace is located in the furnace area of the facility's main building (Warehouse A), to the north of Storage Area IV (Unit 13), and is identified as Unit 15 on the Facility Plot Plan (Figure 2).

ACTIVITY TYPE:

Treatment

ACTIVITY DESCRIPTION:

The Tray Furnace is a gas-fired enclosed furnace that is used to treat tin/lead solder paste and wipes and produce bars of tin/lead solder. Material to be processed is manually placed on steel trays and placed on the rack of the primary burning chamber. All organic material is driven off. The remaining metallic portion is allowed to melt. When the melting process is complete, the trays are manually removed from the furnace. The molten metal is then poured into bar molds and cooled into ingots.

PHYSICAL DESCRIPTION:

The Tray Furnace is an enclosed gas-fired furnace with a refractory lined primary burning chamber. The Tray Furnace also has a secondary afterburner chamber for combustion of any organic vapors that may be produced in the primary burning chamber. The unit is seven (7) feet long by three (3) feet wide by six (6) feet tall and is made of steel.

MAXIMUM CAPACITY:

The maximum permitted treatment capacity is 25 pounds per hour. This capacity includes all permitted waste streams.

WASTE TYPES (see Table 1):

Tin/lead solder paste and wipes (Waste D)
Off-specification, aged or surplus inorganics (Waste N)
Laboratory chemical waste (Waste O)
Metal dust/machining waste (Waste P)
Other metal-bearing sludges (Waste Q)
Filters with Silver (Waste T)
Filters with Lead (Waste U)
Wipes with Silver (Waste V)
Miscellaneous residue with Silver (Waste W)

Miscellaneous residue with Lead (Waste X)

HAZARDOUS WASTE CODES (see Table 2):

U.S. EPA Hazardous Waste Codes: D004, D005, D006, D007, D008, D010, D011

California Hazardous Waste Codes: 141, 171, 172, 181, 491, 541, 551

UNIT-SPECIFIC SPECIAL CONDITIONS:

1. The Tray Furnace may also be used on non-hazardous materials, such as to prepare samples of shredded printed circuit boards for melting in the crucible furnaces.

2. The Tray Furnace shall not be used to treat wastes that contain free liquids.

UNIT NAME:

600 Crucible Furnace

LOCATION:

The 600 Crucible Furnace is located in the furnace area of the facility's main building (Warehouse A), to the north of Storage Area IV (Unit 13), and is identified as Unit 20 on the Facility Plot Plan (Figure 2).

ACTIVITY TYPE:

Treatment

ACTIVITY DESCRIPTION:

The 600 Crucible Furnace is a gas-fired tilt crucible furnace used to recover metal from hazardous wastes. The material to be processed is manually loaded into a crucible. The crucible is then loaded into the furnace and heated until the material becomes molten. When the material becomes molten, it is cast into molds. The material is then allowed to cool into ingots.

PHYSICAL DESCRIPTION:

The 600 Crucible Furnace consists of a refractory lined steel cylinder equipped with natural gas burners. The furnace is a high temperature tilt crucible furnace. Crucibles used in this furnace are made of silicon carbide and have an internal capacity of 24 inches x 37 inches.

MAXIMUM CAPACITY:

The maximum permitted treatment capacity is 360 pounds of hazardous waste per hour. This capacity includes all waste streams permitted for treatment in this unit.

WASTE TYPES (see Table 1):

Tin/lead solder dross (Waste A)
Silver flake (Waste L)
Off specification, aged, or surplus inorganics (Waste N)
Laboratory chemical waste (Waste O)
Metal dust/machining waste (Waste P)
Other metal-bearing sludges (Waste Q)

HAZARDOUS WASTE CODES (see Table 2):

U.S. EPA Hazardous Waste Codes: D004, D005, D006, D007, D008, D010, D011

California Hazardous Waste Codes: 141, 171, 172, 181, 491, 551

UNIT-SPECIFIC SPECIAL CONDITIONS:

1. The 600 Crucible Furnace may also be used on non-hazardous materials, such as to melt samples of shredded printed circuit boards with copper for assay purposes.

2. The 600 Crucible Furnace shall not be used to treat wastes that contain free liquids.

UNIT NAME:

430 Crucible Furnace

LOCATION:

The 430 Crucible Furnace is located in the furnace area of the facility's main building (Warehouse A), to the north of Storage Area IV (Unit 13), and is identified as Unit 21 on the Facility Plot Plan (Figure 2).

ACTIVITY TYPE:

Treatment

ACTIVITY DESCRIPTION:

The 430 Crucible Furnace is a gas-fired tilt crucible furnace used to recover metal from hazardous wastes. The material to be processed is manually loaded into a crucible. The crucible is then loaded into the furnace and heated until the material becomes molten. When the material becomes molten, it is cast into molds. The material is then allowed to cool into ingots.

PHYSICAL DESCRIPTION:

The 430 Crucible Furnace consists of a refractory lined steel cylinder equipped with natural gas burners. The furnace is a high temperature tilt crucible furnace. Crucibles used in this furnace are made of silicon carbide and have an internal capacity of 18 inches x 27 inches.

MAXIMUM CAPACITY:

The maximum permitted treatment capacity is 260 pounds of hazardous waste per hour. This capacity includes all waste streams permitted for treatment in this unit.

WASTE TYPES (see Table 1):

Tin/lead solder dross (Waste A)
Silver flake (Waste L)
Off specification, aged, or surplus inorganics (Waste N)
Laboratory chemical waste (Waste O)
Metal dust/machining waste (Waste P)
Other metal-bearing sludges (Waste Q)

HAZARDOUS WASTE CODES (see Table 2):

U.S. EPA Hazardous Waste Codes: D004, D005, D006, D007, D008, D010, D011

California Hazardous Waste Codes: 141, 171, 172, 181, 491, 551

UNIT-SPECIFIC SPECIAL CONDITIONS:

1. The 430 Crucible Furnace may also be used on non-hazardous materials, such as to melt samples of shredded printed circuit boards with copper for assay purposes.

2. The 430 Crucible Furnace shall not be used to treat wastes that contain free liquids.

UNIT NAME:

E-Waste/Printed Circuit Board Shredder

LOCATION:

The E-Waste/Printed Circuit Board Shredder is located in Storage Area III, which is not a hazardous waste storage area, and north of the furnace area. It is identified as Unit 27 on the Facility Plot Plan (Figure 2).

ACTIVITY TYPE:

Treatment

ACTIVITY DESCRIPTION:

The E-Waste/Printed Circuit Board Shredder shreds electronic scrap, printed circuit boards and other similar materials to a specified particle size (typically one to two inches). The shredded materials can then be shipped to primary smelters or other resource recovery facilities for material recovery.

PHYSICAL DESCRIPTION:

The E-Waste/Printed Circuit Board Shredder is a two shaft rotary shear shredding unit that consists of two shredders in-line designed to shred material to a specified size. The shredder hopper is 21 feet 8 inches tall and 8 feet 6 inches across, with a depth of 8 feet. The shredder unit is 12 feet 3 inches wide, 6 feet tall and 8 feet deep.

MAXIMUM CAPACITY:

The maximum permitted treatment capacity is 40,000 pounds of hazardous waste per month. This capacity includes all waste classified as hazardous waste and permitted for treatment in this unit.

WASTE TYPES (see Table 1):

Slag (Waste M)
Miscellaneous residue with Silver (Waste W)
Miscellaneous residue with Lead (Waste X)
Computer monitors/ Cathode Ray Tubes (CRTs) /Televisions (Waste AA)
Electronic Scrap (Waste BB)

HAZARDOUS WASTE CODES (see Table 2):

U.S. EPA Hazardous Waste Codes: D008, D011

California Hazardous Waste Codes: 181

UNIT-SPECIFIC SPECIAL CONDITIONS:

1. The permitted portion of this unit is the shredding system and does not include the eddy current separation system associated with this unit.

2. The E-Waste/Printed Circuit Board Shredder may also be used on non-hazardous materials. The majority of electronic scrap and manufacturing scrap that arrives at ECS Refining is classified as universal waste. Shredding of universal waste does not require authorization under this Permit. However, certain types of electronic scrap or manufacturing scrap may be classified by the generator as hazardous waste and are not eligible for handling as universal waste.

3. Treatment of non-hazardous or universal waste in this unit is not limited by and does not count towards the maximum permitted capacity; however, treatment of all wastestreams shall not exceed the maximum design capacity of this unit.

4. All hazardous waste treated in this unit is hazardous due to metal content. All non-hazardous or universal waste shredded in this unit is composed of metal. The E-Waste/Printed Circuit Board Shredder does not need to be decontaminated between use for hazardous waste and non-hazardous/universal waste because these wastes are composed of similar metallic materials.

UNIT NAME:

CRT Glass Washing Unit

LOCATION:

This unit will be located inside the D warehouse and will be identified as Unit 28 on the Facility Plot Plan (Figure 2).

ACTIVITY TYPE:

Treatment

ACTIVITY DESCRIPTION:

The CRT Glass Washing Unit will use an aqueous acidic treatment system to wash phosphor coatings from prepared Cathode Ray Tube (CRT) Glass so the glass will be more easily recycled.

PHYSICAL DESCRIPTION:

The design specifications of this unit are confidential and will be approved by DTSC prior to installation.

MAXIMUM CAPACITY:

The maximum permitted treatment capacity is 20,000 pounds of hazardous waste per hour.

WASTE TYPES (see Table 1):

Computer monitors/CRTs/television glass (Waste AA)

HAZARDOUS WASTE CODES:

U.S. EPA Hazardous Waste Codes: None

California Hazardous Waste Codes: None

UNIT-SPECIFIC SPECIAL CONDITIONS:

1. The design specifications of this unit will be approved by DTSC prior to installation of this unit.

2. This unit shall have appropriate secondary containment, which shall be approved by DTSC as part of the final design specifications.

3. Prior to installation of the CRT Glass Washing Unit, ECS Refining shall submit a permit application to the Bay Area Air Quality Management District (BAAQMD) to determine if the CRT Glass Washing Unit requires an air permit. ECS Refining is not authorized to operate the CRT Glass Washing Unit until after completion of the BAAQMD permitting process.

4. The final engineering certification for this unit shall be submitted to DTSC within 60 days after the installation of this unit.

UNIT NAME:

Storage Area I

LOCATION:

Storage Area I is located in the northeast corner of the facility's main building (Warehouse A). It is identified as Unit 10 on the Facility Plot Plan (Figure 2).

ACTIVITY TYPE:

Storage in Containers

ACTIVITY DESCRIPTION:

Storage of solder dross prior to offsite processing

PHYSICAL DESCRIPTION:

Storage Area I consists of a concrete area measuring ten (10) feet long by five (5) feet wide.

MAXIMUM CAPACITY:

The maximum permitted storage capacity is twenty (20) 55-gallon drums.

WASTE TYPES (see Table 1):

Tin/lead solder dross (Waste A)
Tin/lead Oxides (Waste C)

HAZARDOUS WASTE CODES (see Table 2):

U.S. EPA Hazardous Waste Codes: D005, D006, D007, D008, D011

California Hazardous Waste Codes: 181

UNIT-SPECIFIC SPECIAL CONDITIONS:

1. A minimum aisle space of two (2) feet shall be maintained at all times to allow for movement of emergency equipment and personnel.

2. Drums or equivalent containers may not be stacked more than two drums/containers high.

3. Hazardous waste that contains free liquids shall not be stored in Storage Area I.

UNIT NAME:

Storage Area IIa

LOCATION:

Storage Area IIa (Silver Processing Room) is located within the facility's main building (Warehouse A) and is identified as Unit 11a on the Facility Plot Plan (Figure 2).

ACTIVITY TYPE:

Storage in Containers and Treatment in Tanks

ACTIVITY DESCRIPTION:

Storage Area IIa holds two treatment tanks associated with the Photochemical Processing Unit (Unit #1) and the Vacuum Evaporation Unit (Unit #3) and stores liquid hazardous waste in drums and tanks.

PHYSICAL DESCRIPTION:

Storage Area IIa measures 47 feet 8 inches long and 27 feet wide. The floor is constructed of cement coated with epoxy, is entirely surrounded by a 6-inch high berm, and slopes down to the sump on the east wall. The sump and the berm provide secondary containment of 3,820 gallons. Tank A and Tank B are identical cone bottom tanks with internal dimensions of 95 inches x 121 inches, 3,000 gallon capacities, and minimum shell thicknesses of ¼ inch (see Figure 3).

MAXIMUM CAPACITY:

The maximum permitted storage capacity is 7,100 gallons, which is comprised of Tank A (3,000 gallons), Tank B (3,000 gallons) and twenty (20) 55-gallon drums.

WASTE TYPES (see Table 1):

Photochemicals with Silver (Waste F)
Sludge with Silver (Waste I)
Off-specification, aged, or surplus inorganics (Waste N)
Polymeric resin waste (Waste S)
Filters with Silver (Waste T)
Metal-bearing wastewaters (Waste Y)

HAZARDOUS WASTE CODES (see Table 2):

U.S. EPA Hazardous Waste Codes: D004, D005, D006, D007, D008, D010, D011

California Hazardous Waste Codes: 121, 132, 141, 171, 272, 541, 721, 722, 724, 726,

727, 728

UNIT-SPECIFIC SPECIAL CONDITIONS:

1. A minimum aisle space of two (2) feet must be maintained at all times to allow for movement of emergency equipment and personnel.

2. Drums or equivalent containers may not be stacked more than two drums/containers high.

3. Storage Area IIa also serves as a steel wool column decanting station and contains drying ovens for drying steel wool (both exempt activities). Pursuant to California Health and Safety Code section 25143.13, treatment of this silver-only waste does not require a permit.

UNIT NAME:

Storage Area IIb

LOCATION:

Storage Area IIb (Evaporator Area) is located adjacent to the east wall of the facility's main building (Warehouse A) and is identified as Unit 11b on the Facility Plot Plan (Figure 2).

ACTIVITY TYPE:

Storage in Containers; Treatment in Tanks

ACTIVITY DESCRIPTION:

This storage area contains four (4) treatment tanks associated with the Photochemical Processing Unit (Unit #1) and the Vacuum Evaporation Unit (Unit #3), as well as liquid hazardous waste drum storage. It also holds the Vacuum Evaporation Unit (Unit #3) and the unregulated Drum Washing Station (Unit #23).

PHYSICAL DESCRIPTION:

Storage Area IIb measures 85 feet long and 30 feet wide. The floor is constructed of cement coated with epoxy and slopes down to the sump on the west wall. The floor is entirely surrounded by a berm that ranges from 6 inches at its shallowest point to 17 inches at its deepest point next to the sump. The sump and the berm provide secondary containment of 10,690 gallons. Tank 1, 2, and 3 are identical cone bottom tanks with internal dimensions of 95 inches x 105 inches, 2,500 gallon capacities, and minimum shell thicknesses of ¼ inch. Tank C is a flat bottom tank with internal dimensions of 95 inches x 112 inches, a 3,200 gallon capacity, and a minimum shell thickness of ¼ inch. The drums are stored in the southwest corner of Storage Area IIb in an area measuring 22 feet long and 22 feet wide (see Figure 3).

MAXIMUM CAPACITY:

The maximum permitted storage capacity is 19,500 gallons, which is comprised of Tank 1 (2,500 gallons), Tank 2 (2,500 gallons), Tank 3 (2,500 gallons), Tank C (3,200 gallons) and one hundred sixty (160) 55-gallon drums.

WASTE TYPES (see Table 1):

Photochemicals with Silver (Waste F)
Sludge with Silver (Waste I)
Off-specification, aged, or surplus inorganics (Waste N)
Other metal-bearing sludges (Waste Q)
Polymeric resin waste (Waste S)

Filters with Silver (Waste T)
Metal-bearing wastewaters (Waste Y)

HAZARDOUS WASTE CODES (see Table 2):

U.S. EPA Hazardous Waste Codes: D004, D005, D006, D007, D008, D010, D011

California Hazardous Waste Codes: 121, 132, 141, 171, 272, 491, 541, 721, 722, 724, 726, 727, 728

UNIT-SPECIFIC SPECIAL CONDITIONS:

1. A minimum aisle space of two (2) feet must be maintained at all times to allow for movement of emergency equipment and personnel.

2. Drums or equivalent containers may not be stacked more than two drums/containers high.

UNIT NAME:

Storage Area IV

LOCATION:

Storage Area IV is located opposite the receiving area in the facility's main building (Warehouse A) and is identified as Unit 13 on the Facility Plot Plan (Figure 2).

ACTIVITY TYPE:

Storage in Containers

ACTIVITY DESCRIPTION:

This storage area stores liquid and solid hazardous waste in drums.

PHYSICAL DESCRIPTION:

The dimensions of Storage Area IV are 62 feet in length and 58 feet in width.

MAXIMUM CAPACITY:

The maximum permitted storage capacity is six hundred forty-eight (648) 55-gallon drums.

WASTE TYPES (see Table 1):

Tin/lead solder dross (Waste A)
Waste Oil (Waste B)
Tin/lead Oxides (Waste C)
Tin/lead solder paste and wipes (Waste D)
Ash (Waste E)
Photochemicals with Silver (Waste F)
Sludge with Silver (Waste I)
Off-specification, aged, or surplus inorganics (Waste N)
Laboratory chemical waste (Waste O)
Metal dust/machining waste (Waste P)
Other metal-bearing sludges (Waste Q)
Baghouse waste (Waste R)
Polymeric resin waste (Waste S)
Filters with Silver (Waste T)
Filters with Lead (Waste U)
Wipes with Silver (Waste V)
Miscellaneous residue with Silver (Waste W)
Miscellaneous residue with lead (Waste X)
Metal-bearing wastewaters (Waste Y)

HAZARDOUS WASTE CODES (see Table 2):

U.S. EPA Hazardous Waste Codes: D004, D005, D006, D007, D008, D010, D011

California Hazardous Waste Codes: 121, 132, 141, 171, 172, 181, 221, 272, 491, 541, 551, 591, 721, 722, 724, 726, 727, 728

UNIT-SPECIFIC SPECIAL CONDITIONS:

1. A minimum aisle space of two (2) feet must be maintained at all times to allow for movement of emergency equipment and personnel.

2. All liquid hazardous waste stored in Storage Area IV must be stored on containment pallets.

3. The maximum number of fifty-five (55) gallon drums that may be stored on the containment pallets is 4 drums. For combinations of different sized containers, the maximum volume of containers that may be stored on the containment pallet is 220 gallons. Any container stored on a containment pallet in Storage Area IV will count towards the maximum permitted storage capacity in Storage Area IV.

4. Drums or equivalent containers may not be stacked more than two drums/containers high.

5. Non-hazardous waste may be stored in this Storage Area IV; however, this will count towards the maximum permitted capacity for storage in this area.

PART V. SPECIAL CONDITIONS

1. The Permittee is prohibited from any hazardous waste storage, treatment or transfer activity not specifically described in this Permit.

2. Disposal of hazardous waste is prohibited at the Facility, whether temporarily or permanently.

3. Containers shall remain closed except when waste is being added or removed.

4. Containers holding hazardous waste shall be stored only in the authorized areas designated in Part IV of this Standardized Permit. Any non-hazardous waste or universal waste that is stored in a designated hazardous waste storage area as provided by this Permit shall be subject to the conditions of this Permit, including volume calculations, compatibility and inspections.

5. In the event any cracks, gaps, or tears are detected in any hazardous waste management unit, repairs shall be initiated as soon as possible and completed within one week of discovery of the problem. The Permittee shall notify DTSC within twenty-four (24) hours whenever containment problems are found. Within seven (7) days of discovery of the problem, the Permittee shall notify DTSC in writing of corrective measures that have been taken.

6. In the event of any cracks, leaking, or visible damage to a containment pallet, the containment pallet shall be immediately removed from service. The Facility shall either repair or replace the containment pallet.

7. The Permittee shall not store hazardous waste in excess of one year from the date the hazardous waste arrived at the Facility.

8. For the purpose of compliance with the permitted maximum capacity limitations, all containers in the permitted Units are assumed to be full.

9. The following documents are certified by use by the Permittee in accordance with Health and Safety Code section 25201.6(c)(4) and shall be maintained at the Facility at all times until Facility closure is approved by DTSC, and shall be made available to Facility operating personnel, local, State, and federal agencies upon request:

   (a) Facility Location, Seismic and Precipitation Information;
   (b) Manifest System, Record Keeping and Reporting;
   (c) Preparedness and Prevention;
   (d) Security.

10. Any falsification on any of the above certifications or documents or any other information submitted to DTSC in connection with this Standardized Permit

constitutes a false statement under Health and Safety Code section 25189.2 and is subject to enforcement action by DTSC, including permit revocation.

11. Waste Oil (Waste Stream B) stored at the Facility shall only be from onsite sources such as maintenance activities. The Permittee is not allowed to accept used oil from offsite generators.

12. Hazardous waste bearing the waste codes in Table 2 may only be accepted at the Facility as part of the waste streams designated in Tables 1 and 2.

13. An addendum to the Emergency Response and Contingency Plan addressing safety issues associated with the CRT Glass Washing Unit shall be submitted for review and approval by DTSC prior to its installation.

14. The final engineering certification for secondary containment and tank integrity shall be submitted to DTSC within 60 days of the effective date of this Permit.

15. Universal waste may be moved in between Warehouse A and Warehouse B, Warehouse C, Warehouse E, and the Non-hazardous Universal Waste Storage Area marked on the Facility Plot Plan (Figure 2); however, ECS shall not store universal waste in excess of one year from the date the universal waste arrived at the Facility.

PART VI - CORRECTIVE ACTION

1. In the event the Permittee identifies an immediate or potential threat to human health and/or the environment, discovers new releases of hazardous waste and/or hazardous constituents, or discovers new Solid Waste Management Units (SWMUs) not previously identified, the Permittee shall notify DTSC orally within 24 hours of discovery and notify DTSC in writing within 10 days of such discovery summarizing the findings including the immediacy and magnitude of any potential threat to human health and/or the environment.

2. DTSC may require the Permittee to investigate, mitigate and/or take other applicable action to address any immediate or potential threats to human health and/or the environment and newly identified SWMUs or releases of hazardous waste and/or hazardous constituents. If and when corrective action is required at the Facility, the Permittee shall conduct corrective action under either a Corrective Action Consent Agreement or an Enforcement Order for Corrective Action issued by DTSC pursuant to Health and Safety Code sections 25187 and 25200.10.

3. To the extent that work being performed pursuant to Part VI of the Permit must be done on property not owned or controlled by the Permittee, the Permittee shall use its best efforts to obtain access agreements necessary to complete work required by this Part of the Permit from the present owner(s) of such property within 30 days of approval of any workplan for which access is required. "Best efforts" as used in this paragraph shall include, at a minimum, a certified letter from the Permittee to the present owner(s) of such property requesting access agreement(s) to allow the Permittee and DTSC and its authorized representatives access to such property and the payment of reasonable sums of money in consideration of granting access. The Permittee shall provide DTSC with a copy of any access agreement(s). In the event that agreements for the access are not obtained within 30 days of approval of any workplan for which access is required, or of the date that the need for access becomes known to the Permittee, the Permittee shall notify DTSC in writing within 14 days thereafter regarding both efforts undertaken to obtain access and its failure to obtain such agreements. In the event DTSC obtains access, the Permittee shall undertake approved work on such property. If there is any conflict between this permit condition on access and the access requirements in any agreement entered into between DTSC and the Permittee, this permit condition on access shall govern.

4. Nothing in Part VI of the Permit shall be construed to limit or otherwise affect the Permittee's liability and obligation to perform corrective action including corrective action beyond the facility boundary, notwithstanding the lack of access. DTSC may determine that additional on-site measures must be taken to address releases beyond the Facility boundary if access to off-site areas cannot be obtained.

Figure 1: Site Map

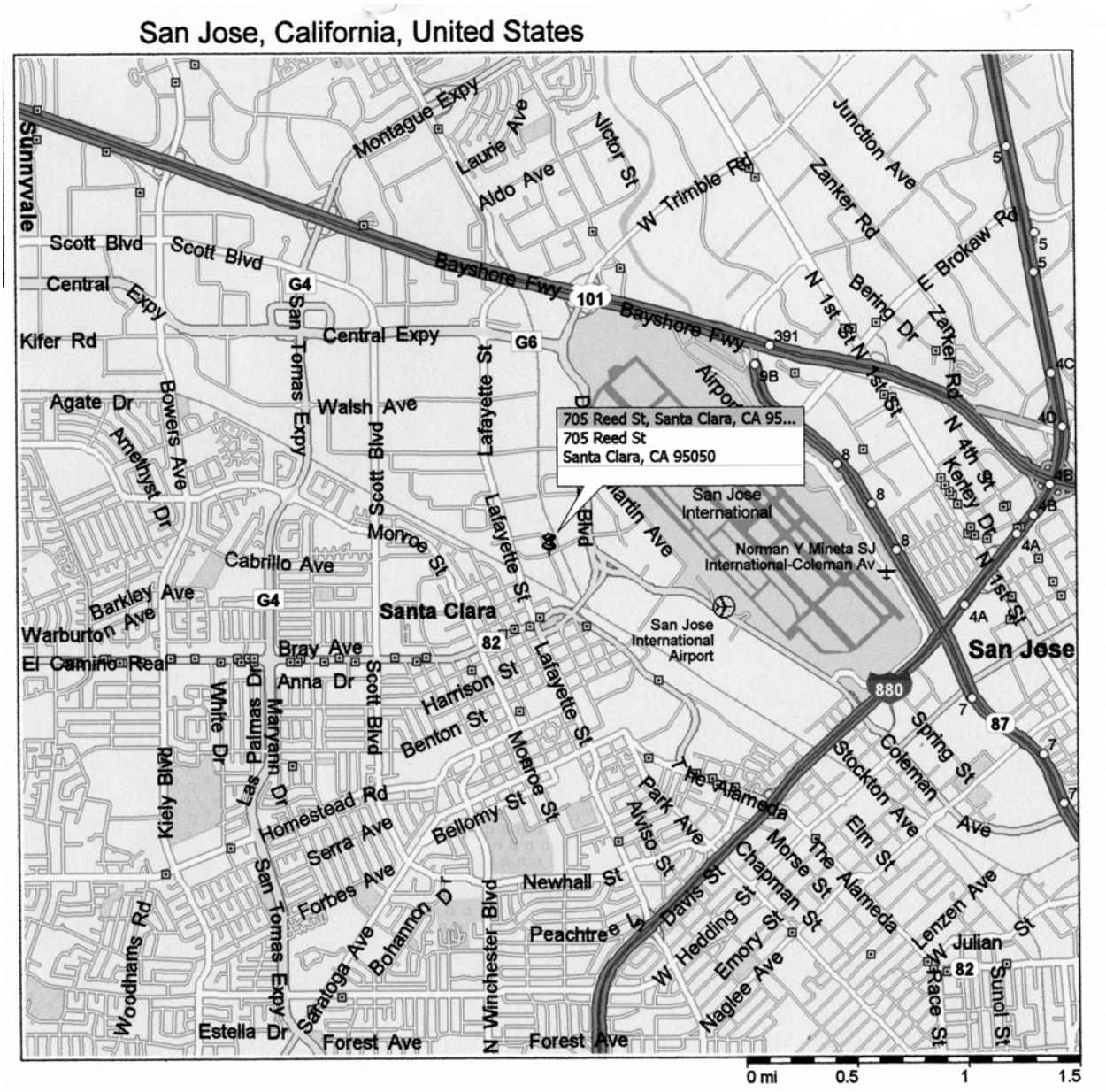

Figure 2: Facility Plot Plan

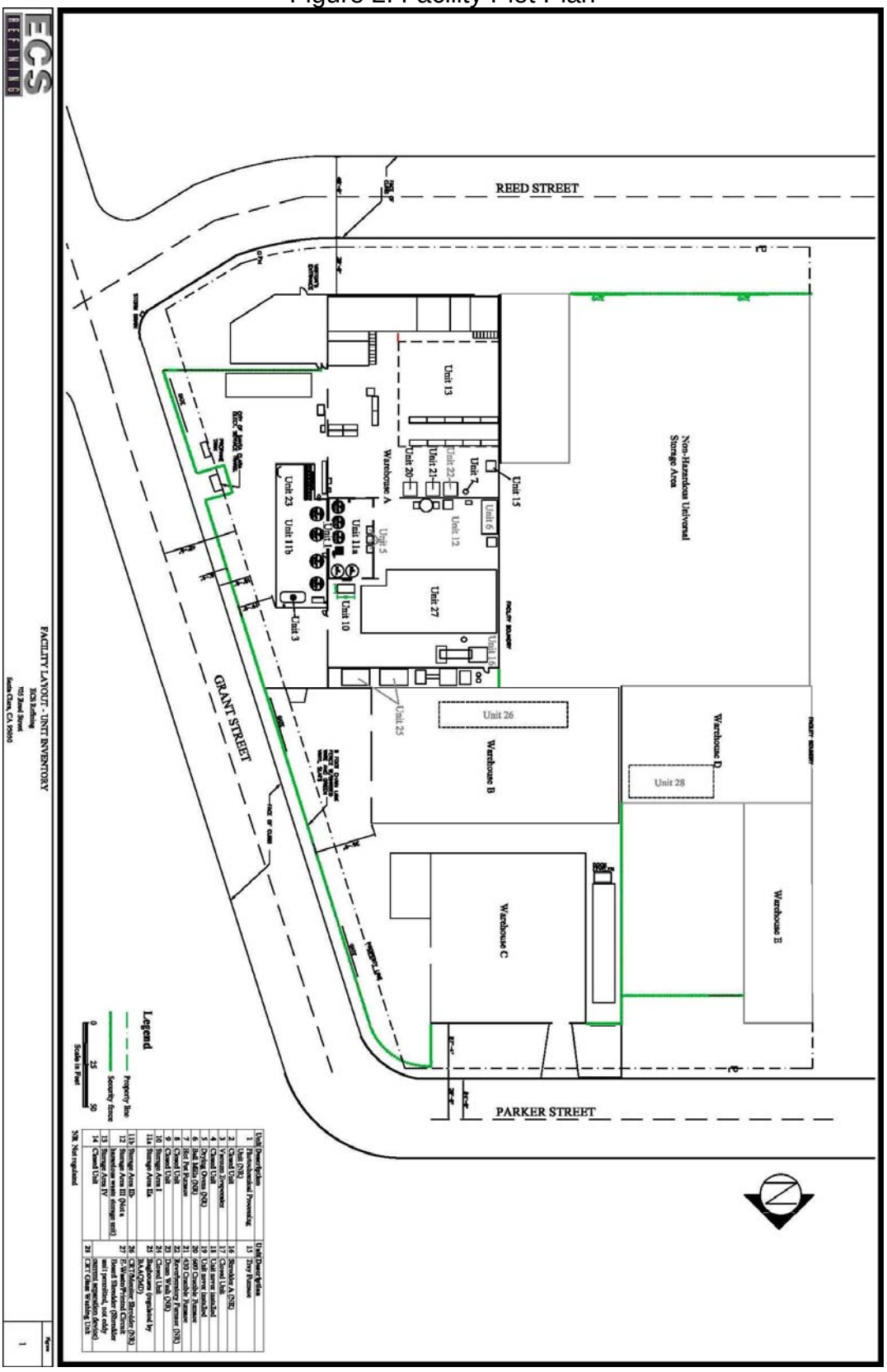

Figure 3: Process Flow/Piping Layout of Unit 1 & 3; Layout of Storage Areas IIa and IIb

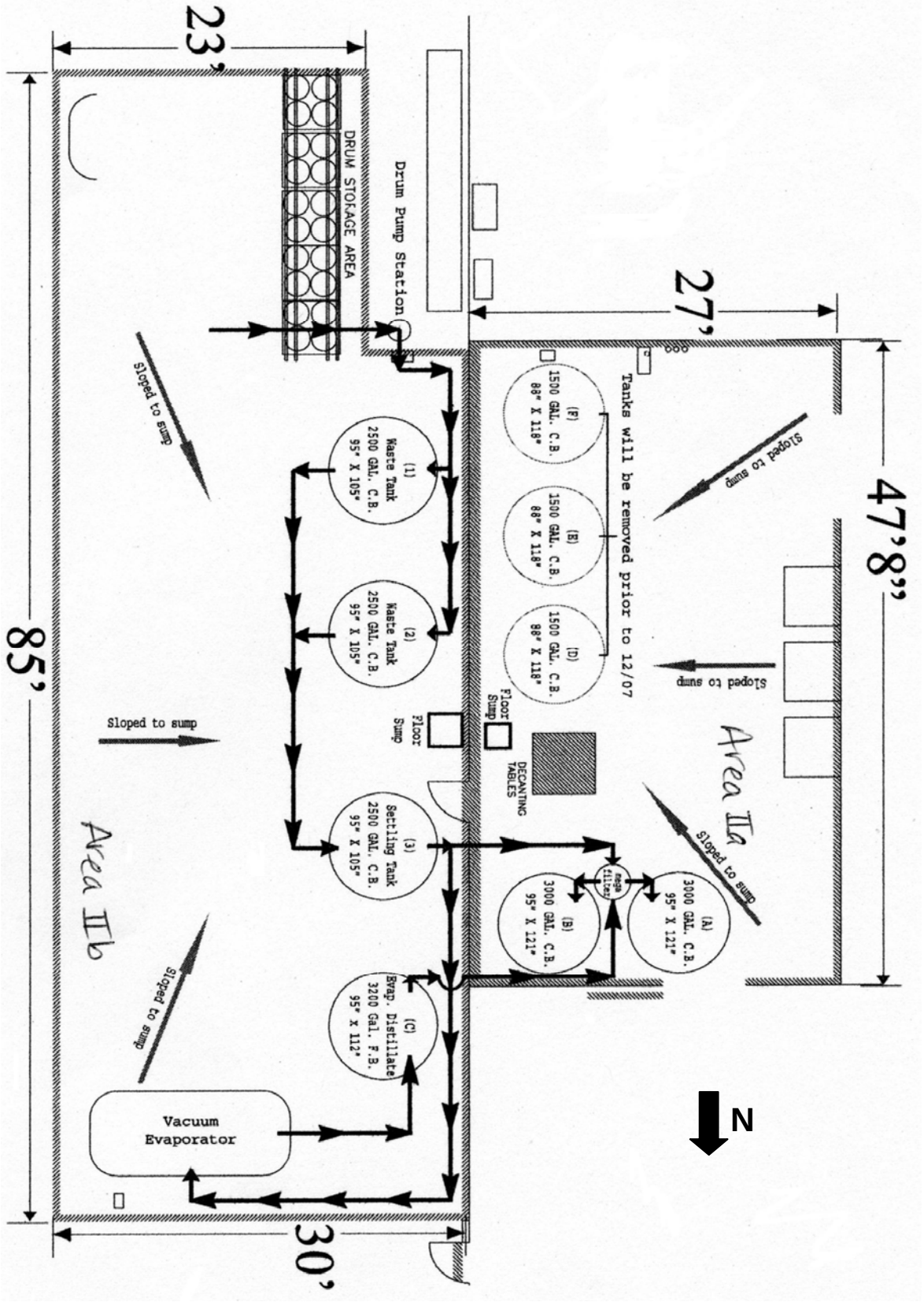

Table 1: Waste Streams

Waste Stream Letter	Common Name of Hazardous Waste
A	Tin/lead solder dross
B	Waste Oil
C	Tin/lead Oxides
D	Tin/lead solder paste and wipes
E	Ash
F	Photochemicals with Silver
G	Treated Effluent
H	Steel Wool Recovery Column (or Cartridge)
I	Sludge with Silver
J	Dry sludge with Silver
K	Ag/Fe Pulp
L	Silver Flake
M	Slag
N	Off-specification, aged or surplus inorganics
O	Laboratory chemical waste
P	Metal dust/machining waste
Q	Other metal-bearing sludges
R	Baghouse waste
S	Polymeric resin waste
T	Filters with Silver
U	Filters with Lead
V	Wipes with Silver
W	Miscellaneous Residue with Silver
X	Miscellaneous Residue with Lead
Y	Metal-bearing wastewaters
Z	Router Dust
AA	Computer monitors/ Cathode ray tubes (CRTs)/ Televisions
BB	Electronic Scrap
CC	Batteries
DD	Fluorescent light tubes

Table 2: Waste Codes handled at ECS Refining

Waste Codes	Waste Streams corresponding to codes
U.S. EPA Hazardous Waste Codes	
D004	N, O, P, Q, R, S, Y
D005	A, C, D, E, N, O, P, Q, R, S, Y
D006	A, C, D, E, N, O, P, Q, R, S, Y
D007	A, C, D, E, F, I, N, O, P, Q, R, S, Y
D008	A, C, D, E, N, O, P, Q, R, S, U, X, Y
D010	N, O, P, Q, R, S, Y
D011	A, C, D, E, F, I, N, O, P, Q, R, S, T, V, W, Y
California Hazardous Waste Codes	
121	Y
132	Y
135	Y
141	N,
171	I, Q, T, U
172	P
181	A, C, D, E, V, W, X
221	B
272	S
491	Q
541	F, I, S, T, V
551	O
591	R
721	Y
722	Y
724	Y
726	Y
727	Y
728	Y